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EXAMINER
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 40

Application Number: 09/982,154
Filing Date: October 18, 2001
Appellant(s): GORRELL, BRIAN E.

Richard D. Conard
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 23, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because claims 1-2 and 9-20 should stand together since that were rejected under the same prior art and claims 3-8 should stand together since they were rejected under the same prior art.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

4,576,927	Hasting et al	3-1986
5,250,755	Dinzen et al	10-1993
4,739,935	Hasting et al	04-1988

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(1) Claims 1-2 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings et al (Pat Num 4,576,827, herein referred to as Hastings) in view of Dinzen et al (Pat Num 5,250,755, herein referred to as Dinzen). Hasting discloses a high voltage cable (Figs 1-9) utilized in a spray system. Specifically, with respect to claim 1, Hastings discloses a high voltage cable (Fig 9) including a fiber core (200, Col 14, lines 46-48), a first layer (202) of an electrically relatively non-insulative polymer (Col 14, lines 49-50), a second layer (204) of an electrically relatively non-conductive polymer (Col 15, lines 5-8), a fourth layer (206) including a metal braid shield (Col 15, lines 14-16), and a fifth layer (210) including a relatively solvent- and abrasive-resistant polymer jacket (Col 15, lines 20-21). With respect to claim 2, Hastings discloses that the fiber core (200) includes a stranded fiber polyester core (i.e. Dacron, Col 14, lines 46-48). With respect to claims 9-10, Hastings discloses that the second layer (204) may include a layer of non-conductive layer of low-density polyethylene (Col 15, lines 5-7). With respect to claim 17, Hastings discloses that the metal braid shield (206) includes a metal braid covering between about 100`% of the outside surface of the second layer (204) of electrically relatively insulative polymer (Fig 9). With respect to claim 19, Hastings discloses that the polymer jacket (210) includes a flexible polyurethane jacket (Col 15, lines 19-20). With respect to claim 18, Hastings discloses that the fourth layer (206) including a metal braid shield has a pitch (Fig 9). With respect to claim 20, Hastings discloses that cable (Fig 1a) is in combination with a high magnitude electrostatic potential supply (16a), a device (spray gun) for the electrostatically aided atomization and dispensing of a coating material (Col 7, lines 20-30), a source (4a) of

the coating material coupled to the device (spray gun), and wherein the high voltage cable (16) is coupled to the potential supply (16a) to the device (spray gun, Col 7, lines 59-64).

However, Hastings doesn't necessarily disclose a third layer of an electrically relatively non-insulative polymer being between the insulative and braided materials (claim 1); nor the third layer being PVC (claim 11); nor the PVC layer being a spirally wrapped (claims 12-13); nor the metal braid shield being a copper containing braid shield (claim 14); nor the metal braid comprising tin (claim 15); nor the braided shield comprising a tin containing braid shield (claim 16); nor the ~~nor the~~ fourth braided layer surrounding the third layer of conductive material (claim 17); nor the pitch of the braid shield being between 0-20° to a perpendicular to the longitudinal extent of the cable (claim 18).

Dinzen teaches a high voltage cable (Figs 1-2) having a configuration that is known in the art of cables (Col 4, lines 30-65) for carrying high voltages without damaging the cable itself (Col 1, lines 7-13). Specifically, with respect to claims 1 & 17, Dinzen teaches a conventional cable (Fig 1a) comprising a core (1) surrounded by a first layer conductive sleeve (2), a second layer high voltage insulative sleeve (3) surrounding the first layer conductive sleeve (2), a third layer conductive sleeve (4) surrounding the second layer high voltage sleeve (3), a fourth layer of braided wires (5) surrounding the third layer conductive sleeve (4), and an outer casing of PVC (6) surrounding the fourth layer of braided wires (5, Col 4, lines 30-50). With respect to claims 11-12, Dinzen teaches that the third layer of conductive material (4) extending

between the second layer of insulative material (3) and the fourth layer of braided conductive material (5), may be made of an synthetic resin, such as embedded PVC (Col 1, lines 50-58). With respect to claim 14, Dinzen teaches that the braided shield (5) is made of copper wires (Col 4, lines 60-62).

With respect to claims 1, 14, & 17, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable configuration of Hastings to comprise a third layer of conductive polymer material extending between the second layer of insulative material and a fourth layer of braided material wherein the fourth layer of braided shield is made as a copper braided shield as taught by Dinzen because Dinzen teach that such a configuration is a conventional high voltage cable configuration and provides for carrying high voltages without damaging the cable itself (Col 1, lines 7-13).

With respect to claims 12-13 and 15-16, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable of modified Hastings to comprise the layer to be a spirally wrapped PVC and copper-tin braided shield, since it has been held to be within general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With respect to claim 18, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the fourth layer of conductive braided shield to comprise a pitch of the braid shield to be between 0-20° to a perpendicular to the longitudinal extent of the cable, since it has been held that a

change in form cannot sustain patentability where involved is only extended application of obvious attributes from a prior art. *In re Span-Deck Inc. vs. Fab-Con Inc. (CA 8, 1982) 215 USPQ 835.*

(2) Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings (Pat Num 4,576,827) in view of Dinzen et al (Pat Num 5,250,755, herein referred to as modified Hastings), as applied to claim 1 above, further in view of Hastings et al (Pat Num 4,739,935, herein referred to as Hastings2). Modified Hasting discloses a high voltage cable (Figs 1-9) utilized in a spray system as described above with respect to claim 1. Specifically, with respect to claims 3-6, modified Hastings (see Hastings) discloses that the fiber core (200) is impregnated with silicon carbide fibers (abstract). With respect to claims 7-8, modified Hastings (see Hastings) discloses that the first layer of electrically relatively non insulative polymer is made of semiconductive polypropylene loaded with carbon black (Col 14, lines 49-50). With respect to claims 14-16, modified Hastings discloses a fourth layer is a metal braid shield (Col 15, lines 14-15).

However, modified Hastings doesn't necessarily disclose the fiber core being impregnated to increase its bulk conductivity (claims 3 & 5), nor the fiber core being impregnated with carbon black (claims 4 & 6).

Hastings2 teaches a high voltage cable (Figs 1-3) utilized in a spray system, that eliminates the possibly of having corona inducing voids or spaces between the carbon loaded sheath and the outer dielectric layers, thereby eliminating the possibly of cable failure (Col 2, lines 27-42). Specifically, with respect to claim 3, Hastings2 teaches that

the fiber core (42) is impregnated to increase its bulk conductivity (i.e. silicon carbide). With respect to claim 4, Hastings2 teaches that the fiber core (42) is impregnated with carbon black (i.e. silicon carbide). With respect to claim 5, Hastings2 teaches that the fiber core (42) is impregnated to increase its bulk conductivity. With respect to claim 6, Hastings2 teaches that the fiber core (42) is impregnated with carbon black (i.e. silicon carbide). With respect to claim 7, Hastings2 teaches that the first layer (202) includes a layer of semiconductive polyethylene (Col 14, lines 50-55). With respect to claim 8, Hastings2 teaches that the first layer (44) includes a layer of semiconductive polyethylene that includes a layer of carbon black-loaded polyethylene (Col 4, lines 50-55).

With respect to claims 3-8, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable of modified Hastings to comprise the material configuration as taught by Hastings2 because Hastings2 teaches that such a configuration eliminates the possibility of having corona inducing voids or spaces between the carbon loaded sheath and the outer dielectric layers, thereby eliminating the possibly of cable failure (Col 2, lines 27-42) and since it has been held to be within general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

(11) Response to Argument

Applicant's arguments filed June 16, 2003 have been fully considered but they are not persuasive. The applicant argues the following:

A) The examiner has engaged in impermissible hindsight by using the Applicant's specification to substitute the specific isolated layers of specific materials from Dinzen into Hastings, because Hastings discloses too many combinations of embodiments and a person of ordinary skill in the art would not no to pick the specific materials and layers as the examiner has done.

B) That the combination of Hastings '827, Dinzen '755, with respect to claims 1-2 and 9-20, and the combination of Hastings '827, Dinzen '755, and Hastings '935, do not meet the requirements recognized by In re Lee to make out a prima facie case of obviousness under 35 USC 103(a) and therefore the combination is improper.

With respect to argument A, the examiner respectfully traverses. It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Secondly, while the applicant is correct in stating the Dinzen teaches a lot of different configurations and materials (i.e. species of the invention) that may be utilized

in cable, however the fact remains that Dinzen clearly teaches that the high voltage cable having the dual conductive layer between the insulation layer and the jacket layer configuration, is well known in the art of cables. Specifically, the Dinzen references states in Column 4, lines 41-49

> "As conventional the inner conductor is concentrically surrounded by an inner conducting sleeve 2 of semi-conducting rubber with the diameter of 5mm, a high voltage insulation 3 of EPR (ethylene-propylene rubber) with a diameter of 15mm, an outer conducting layer 5 of braided copper wires with 95% covering, and an outer casing of PVC diameter of 19 mm."

Therefore, the fact that Dinzen discloses an abundance of species in which his claimed invention can be configured utilizing different materials, does not destract from the suggestion to one of ordinary skill in the art. Based, on the teaching of Dinzen, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable configuration of Hastings to comprise a third layer of conductive polymer material extending between the second layer of insulative material and a fourth layer of braided material wherein the fourth layer of braided shield is made as a copper braided shield as taught by Dinzen because Dinzen teach that such a configuration is a conventional high voltage cable configuration and provides for carrying high voltages without damaging the cable itself (Col 1, lines 7-13) and it appears that Hastings '827 would perform the task of providing protection of the high voltage cable equally well with or without the modification of the known cable of Dinzen.

Thirdly, it has been held that if a species (configuration) is clearly named, the species claim is anticipated no matter how many other species are additionally named. Ex parte A, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990) (The claimed compound was named in a reference which also disclosed 45 other compounds. Specifically, the Board has held that the comprehensiveness of the listing did not negate the fact that the compound claimed was specifically taught. The Board compared the facts to the situation in which the compound was found in the Merck Index, saying that "the tenth edition of the Merck Index lists ten thousand compounds. In our view, each and every one of those compounds is described' as that term is used in 35 U.S.C. § 102(a), in that publication."). Id. at 1718. See also In re Sivaramakrishnan, 673 F.2d 1383, 213 USPQ 441 (CCPA 1982) (The claims were directed to polycarbonate containing cadmium laurate as an additive. The court upheld the Board's finding that a reference specifically naming cadmium laurate as an additive amongst a list of many suitable salts in polycarbonate resin anticipated the claims. The applicant had argued that cadmium laurate was only disclosed as representative of the salts and was expected to have the same properties as the other salts listed while, as shown in the application, cadmium laurate had unexpected properties. The court held that it did not matter that the salt was not disclosed as being preferred, the reference still anticipated the claims and because the claim was anticipated, the unexpected properties were immaterial.) Therefore, the examiner respectfully submits that the rejection is proper and within the standard of 35 USC 103(a).

With respect to argument B, the examiner respectfully traverses. The examiner recognizes that in order to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - §2143.03 for decisions pertinent to each of these criteria. First, it is submitted that both Hastings '827 and Dinzen '755 both are concerned with high voltage cables, that have specific configurations to provide the high voltage cable with protection from internal damage, that results from high voltage voltages (see Col 2, lines 45-68 of '935 & Col 1, lines 5-14 of '755). The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Hastings '827 clearly teaches a configuration for a high voltage cable for the purpose of providing the high voltage cable with protection from internal damage, that results from high voltage

voltages at a reduced manufacturing cost (see Col 2, lines 45-68 of '935). However, Hastings '827 doesn't necessarily disclose a third layer of an electrically relatively non-insulative polymer being between the insulative and braided materials (claim 1), nor the third layer being PVC (claim 11), nor the PVC layer being a spirally wrapped (claims 12-13), nor the metal braid shield being a copper containing braid shield (claim 14), nor the metal braid comprising tin (claim 15), nor the braided shield comprising a tin containing braid shield (claim 16), nor the nor the fourth braided layer surrounding the third layer of conductive material (claim 17), nor the pitch of the braid shield being between 0-20° to a perpendicular to the longitudinal extent of the cable (claim 18). The examiner relied on Dinzen for its teaching of a conventional high voltage cable (Fig 1a) having a known configuration to provide the high voltage cable with protection from internal damage, that results from high voltage voltages (see Col 1, lines 5-14 of '755). Specifically, Dinzen teaches a conventional high voltage cable comprising a core (1) surrounded by a first layer conductive sleeve (2), a second layer high voltage insulative sleeve (3) surrounding the first layer conductive sleeve (2), a third layer conductive sleeve (4) surrounding the second layer high voltage sleeve (3), a fourth layer of braided wires (5) surrounding the third layer conductive sleeve (4), and an outer casing of PVC (6) surrounding the fourth layer of braided wires (5, Col 4, lines 30-50), which provides for carrying high voltages without damaging the cable itself (Col 1, lines 7-13). One of ordinary skill in the art would recognize that providing high voltage cables with different configurations are known as taught by Dinzen, and that modifying any high voltage cable with known materials and configurations as taught by Dinzen in the art of cables,

would be considered to be an obvious matter of design choice. Specifically, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable configuration of Hastings to comprise a third layer of conductive polymer material extending between the second layer of insulative material and a fourth layer of braided material and copper braided shield as taught by Dinzen because Dinzen teach that such a configuration is a conventional high voltage cable configuration and provides for carrying high voltages without damaging the cable itself (Col 1, lines 7-13) and it appears that Hastings '827 would perform the task of providing protection of the high voltage cable equally well with or without the modification of the known cable of Dinzen. Therefore, there exist a motivation to combine the teachings of Hastings '827 and Dinzen '755 and there exist a reasonable expectation of success. Thirdly, the references, when combined, teach all of the claim limitations. With respect to the combination of Hastings '827, Dinzen '755, further in view of Hastings '935, it is submitted that Hastings '935, also is concerned with a specified configuration, that provides a high voltage cable with internal protection of the during the duration of provide high voltages. Specifically, modified Hastings '827 (the combination of Hastings '827 & Dinzen '755) teach all of the claim limitations, except the fiber core being impregnated to increase its bulk conductivity (claims 3 & 5), nor the fiber core being impregnated with carbon black (claims 4 & 6). Hastings '935 teaches a high voltage cable (Figs 1-3) that eliminates the possibly of having corona inducing voids or spaces between the carbon loaded sheath and the outer dielectric layers, thereby eliminating the possibly of cable failure (Col 2, lines 27-42). Therefore, there

exist a motivation to combine the teachings of modified Hastings '827 and Hasting '935. Secondly, there exist a reasonable expectation of success. Thirdly, the references, when combined, teach all of the claim limitations. In light of the above explanation, the examiner respectfully submits, that a proper prima facie case of obviousness has been met and that the combination of Hastings '827, Dinzen '755, and Hastings '935 is proper and therefore just.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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WHM III
March 20, 2004

Conferees

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